

Total MCQs:220



Max. Marks:1100

ENTRANCE TEST 2017 (Reconduct)
For F.Sc and Non-F.Sc Students
Time Allowed: 150 Minutes

Instructions:

- Read the instructions on answer sheet carefully.
- Choose the **Single Best Answer** for each question.
- Candidates are strictly prohibited from giving any identification mark except Roll No. & Signature in the specified columns only.

COMPULSORY QUESTION FOR IDENTIFICATION:

Q.ID What is the colour of your question paper?

- A) White C) Pink
 B) Blue D) Green

Ans: Color of your Question Paper is Blue.
Fill the Circle corresponding to letter 'B'
against 'ID' in your MCQ response form
(Exactly as shown in the diagram).

— ID
 — 1
 — 2
 — 3
 — 4

A	B	C	D
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CHEMISTRYQ.1 Determine the number of moles of O_2 in 10.6g of $NaCO_3$:

- A) 0.4 moles C) 0.2 moles
 B) 0.3 moles D) None of these

Q.2 Calculate the grams of H_2O formed when 8 g of CH_4 burns in excess of oxygen:

- A) 21 grams C) 18 grams
 B) 19 grams D) 15 grams

Q.3 Choose the correct option regarding number of particles associated with one mole of a substance:

- A) 6.03×10^{23} C) 6.02×10^{23}
 B) 6.01×10^{23} D) 6.02×10^{23}

Q.4 A compound has an empirical formula CH_2Cl , and molecular formula mass as 99g mol^{-1} , identify the compound:

- A) C_2H_4Cl C) $C_2H_4Cl_2$
 B) C_4H_8Cl D) $C_2H_2Cl_3$

Q.5 Identify the value of R at STP:

- A) $8.314 \text{ atm dm}^3 \text{ mol}^{-1}$ C) $0.0821 \text{ atm dm}^3 \text{ K}^{-1} \text{ mol}^{-1}$
 B) $0.0821 \text{ cal K}^{-1} \text{ mol}^{-1}$ D) $8.314 \text{ cal K}^{-1} \text{ mol}^{-1}$

- Q.6 In the equation $\left(P + \frac{n^2a}{V^2}\right)(V - nb) = RT$, 'b' represents the _____:
- A) Excluded volume
B) Excluded pressure
C) Actual volume
D) Excluded volume per mole

- Q.7 What is the reason that ice at 0°C occupies more volume than water:
- A) Empty spaces
B) Ionic bond
C) Intermolecular forces
D) Debye forces

- Q.8 Identify the correct option associated with the shape of p-orbital:



A)

x



B)

x



C)

x

z



D)

x

- Q.9 pi-bond is formed by sideways overlap of _____
- A) s-orbitals
B) p-orbitals
C) d-orbitals
D) None of these

- Q.10 What is the exact value of angle in BF_3 :
- A) 90°
B) 119.5°
C) 104.5°
D) 120°

- Q.11 Determine the value of Enthalpy of formation of NH_4Cl :
- A) -788 kJ mol^{-1}
B) -314.55 kJ mol^{-1}
C) -692 kJ mol^{-1}
D) None of these

- Q.12 Enthalpy is measured at _____:
- A) 300 K and 2 atm
B) 300 K and 1 atm
C) 298 K and 1 atm
D) 295 K and 1 atm

- Q.13 During space flights, astronauts obtained water from _____:
- A) Nickel cadmium cells
B) Fuel cells
C) Lead accumulator
D) Alkaline battery

- Q.14 For the purification of copper, impure copper is made the _____:
- A) Cathode
B) Anode
C) Solution
D) Both A & B

- Q.15 $\text{Ca}(\text{OH})_2$ is sparingly soluble having solubility value 6.5×10^{-6} . What'll be its solubility:
- A) 2.75×10^{-2}
C) 1.17×10^{-2}

C) 2.75×10^2 D) 3.63×10^1

Q.16 Unit of K in first order Reaction is:

A) s^{-1} C) moles dm^{-3} B) $\text{moles dm}^{-3} s^{-1}$ D) $\text{mol}^{-1} \text{dm}^3$

Q.17 Rate of first order reaction depends on _____:

A) Concentration of one reactant

C) Concentration of three reactants

B) Concentration of two reactants

D) Independent of the initial concentration

Q.18 Among the following, which contains same no. of electrons & protons but different no. of neutrons:

A) Isobars

C) Isotones

B) Isotopes

D) None of these

Q.19 Melting point of Na & Mg decreases down the group due to _____:

A) Strong electronegativity

C) Increment in size

B) Strong attractive forces

D) High ionization energy

Q.20 Ionic radius decreases along the period due to:

A) Addition of a new shell

C) High ionization energy

B) Increase in nuclear charge

D) Decrease in nuclear charge

Q.21 Among the following, which one is least reactive metal:

A) Mg

C) Na

B) Ca

D) Be

Q.22 Identify the element that has maximum oxidation states:

A) Zinc

C) Vanadium

B) Chromium

D) Manganese

Q.23 How many ligands $K_2[Fe(CN)_6]$ contains:

A) 4

C) 6

B) 7

D) 5

Q.24 To avoid the oxidation of filaments which element is used in electric bulbs:

A) Krypton

C) Helium

B) Argon

D) Neon

Q.25 Among the following, which is a catalyst in contact process:

A) V_2O_5 C) NH_4Cl B) H_2SO_4 D) $NaOH$

Q.26 In contact process, optimum temperature lies between _____:

A) $200-300^\circ\text{C}$ B) $400-500^\circ\text{C}$ B) $300-400^\circ\text{C}$ D) $300-500^\circ\text{C}$

Q.27 Nitrogen is required by plants for the _____:

A) Formation of starch and sugar

C) Stimulation of early growth

B) Development of roots and leaves

D) Formation of fruit

Q.28 Name the compound, which shows geometric isomerism:

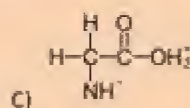
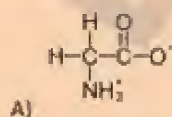
A) 1-bromo-2-chloropropene

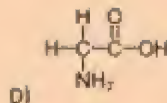
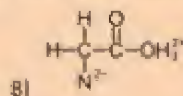
C) 2,3-dimethylpropene

- B) 2-pentene
D) both A & B
- Q.29 Cyclobutane structure is categorized under:
A) Aromatic compounds
B) Alicyclic compounds
C) Aliphatic compounds
D) Heterocyclic compounds
- Q.30 What should be the temperature and pressure respectively for catalytic cracking:
A) 500°C, 2 atm
B) 900°C, 2 atm
C) 500°C, 4 atm
D) 900°C, 4 atm
- Q.31 At 25°C with phenol 2-4-Dinitrophenol is formed by the reaction of:
A) $(\text{HNO}_3 + \text{H}_2\text{SO}_4)$ with benzene
B) $(\text{HNO}_3 + \text{H}_2\text{SO}_4)$ with phenol
C) NaOH with Benzene sulphonic acid
D) Sodium phenoxide with HCl
- Q.32 For halogenation of benzene, which reagent is used:
A) H_2SO_4
B) AlCl_3
C) HNO_3
D) HCl
- Q.33 Among the following, which one has electron withdrawing effect:
A) $-\text{NH}_2$
B) $-\text{N}(\text{CH}_3)_2$
C) $-\text{CHO}$
D) $-\text{I}$
- Q.34 Catalytic Oxidation of alkanes results in the formation of _____:
A) Carboxylic acid
B) Aldehyde
C) Ketone
D) Alcohol
- Q.35 Which is an intermediate compound in $\text{S}_{\text{N}}1$:
A) Ethoxide ion
B) Alkyl halide
C) Alkene
D) Carbocation
- Q.36 Among the alkyl halides, which always follows $\text{S}_{\text{N}}2$ mechanism:
A) Primary alkyl halides
B) Secondary alkyl halides
C) Tertiary alkyl halide
D) Both B & C
- Q.37 Among the following, which one is a nucleophile:
A) H^+
B) OH^-
C) Ca^{2+}
D) None of these
- Q.38 In elimination reaction, _____ is used:
A) Acidic $\text{K}_2\text{Cr}_2\text{O}_7$
B) CuCl
C) Acidic NaOH
D) Alcoholic KOH
- Q.39 Identify the product X in the following reaction:
$$\text{CH}_3\text{COOH} + \text{PCl}_5 \xrightarrow{\text{yields}} \text{X} + \text{POCl}_3 + \text{HCl}$$

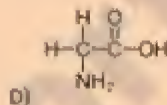
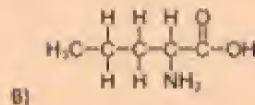
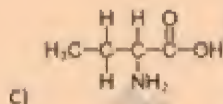
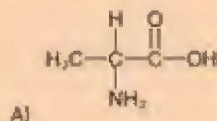
A) CH_3COCl
B) CH_3COCl_2
C) $\text{CH}_3\text{COCH}_2\text{Cl}_2$
D) CH_2COCl_2
- Q.40 Reaction of alcohol with hydrogen chloride yields _____:
A) Ketone
B) Carboxylic acid
C) Aldehyde
D) Ester

- Q.41 The acidity of Phenol is due to its _____:
 A) Nature of Benzene
 B) Double bond in benzene ring
 C) Nature of phenoxide
 D) Hydroxyl group
- Q.42 Sodium phenoxide on treating with hydrochloric acids yields:
 A) Benzene
 B) Benzoic acid
 C) Phenol
 D) Benzaldehyde
- Q.43 Which reagent is responsible for the conversion of ketone to secondary alcohol:
 A) NaAlH_4
 B) NaBH_3
 C) Al
 D) Red P
- Q.44 Both aldehyde and ketones give _____:
 A) Tollen's Test
 B) 2,4-DNPH test
 C) Benedict's solution test
 D) Sodium nitroprusside test
- Q.45 To distinguish aldehyde from ketone which solution is used:
 A) Alkaline solution
 B) Fehling's solution
 C) A solution containing $\text{K}_2\text{Cr}_2\text{O}_7$
 D) A solution containing acid only
- Q.46 Identify the compound, which give Iodoform test:
 A) Methanol
 B) Methyl ketone
 C) 3-Hexanol
 D) Propionaldehyde
- Q.47 Which one is a functional group of carboxylic acid:
 A) $\begin{array}{c} \text{O} \\ \parallel \\ \text{—C—OH} \end{array}$
 B) $\begin{array}{c} \text{O} \\ \parallel \\ \text{—C—O—C—} \end{array}$
 C) $\begin{array}{c} \text{O} \\ \parallel \\ \text{—C—} \end{array}$
 D) None of these
- Q.48 Final product of hydrolysis of nitrile yield _____:
 A) Ketone
 B) Aldehyde
 C) Alcohol
 D) Carboxylic acid
- Q.49 During esterification, the bond from alcohol that breaks is between _____:
 A) Carbon and oxygen
 B) Oxygen and hydrogen
 C) Carbon and carbon
 D) None of these
- Q.50 2-propanone on oxidation gives _____:
 A) Aldehyde
 B) Ketone
 C) Carboxylic Acid
 D) Alcohol
- Q.51 Among the following structure, Identify the one, which represents the structure of Zwitter ion:





Q.52 Among the following, choose the correct option regarding the structure of Alanine:



Q.53 Identify the monomers of Polyvinyl chloride:

- A) Vinyl acetate
B) Butyl maleate

- C) Styrene
D) Vinyl chloride

Q.54 Among the following, which compound is formed by addition polymerization:

- A) Polystyrene
B) Polyester

- C) Nylon
D) Both A & B

Q.55 Phosphoprotein comes under the type of proteins:

- A) Simple protein
B) Conjugated Protein

- C) Derived protein
D) Both B & C

Q.56 Which agent is responsible for the acid rain _____:

- A) O_3
B) $\text{Ca}(\text{SO}_4)$

- C) NO_2
D) HNO_3 & H_2SO_4

Q.57 Chlorination and Bromination mostly uses _____:

- A) Radiowaves
B) Visible light

- C) Infrared radiations
D) U.V light

Q.58 _____

- A) _____
B) _____

- C) _____
D) _____

ANSWERS PANORAMA

Number	Answer	Number	Answer	Number	Answer
01	B	21	D	41	C
02	C	22	D	42	C
03	D	23	C	43	B
04	C	24	B	44	B
05	C	25	A	45	B
06	D	26	B	46	B
07	A	27	B	47	A
08	B	28	D	48	D
09	B	29	B	49	B
10	D	30	A	50	B
11	B	31	B	51	A
12	C	32	B	52	A
13	B	33	C	53	D
14	B	34	A	54	A
15	C	35	D	55	B
16	A	36	A	56	D
17	A	37	B	57	D
18	B	38	D	58	--
19	C	39	A	XX	XX
20	B	40	C	XX	XX